Biotechnology and Bioengineering

Volume 92, 2005

October 5, 2005

ARTICLES

1 Improved Production of Insecticidal Proteins in *Bacillus thuringiensis* Strains Carrying an Additional *cry1C* Gene in Its Chromosome
C. Yue, M. Sun, and Z. Yu
Published online 22 August 2005

8 Positioning, Displacement, and Localization of Cells Using Ultrasonic Forces
A. Haake, A. Neild, G. Radziwill, and J. Dual
Published online 10 August 2005

15 Anaerobic Biodegradation of Oleic and Palmitic Acids: Evidence of Mass Transfer Limitations Caused by Long Chain Fatty Acid Accumulation onto the Anaerobic Sludge
M.A. Pereira, O.C. Pires, M. Mota, and M.M. Alves
Published online 31 August 2005

24 PEG Conjugation Moderately Protects Adeno-Associated Viral Vectors Against Antibody Neutralization
G.K. Lee, N. Maheshri, B. Kaspar, and D.V. Schaffer
Published online 3 June 2005

35 Theoretical Analysis of Selection-Based Strain Improvement for Microorganisms With Growth Dependent Upon Extracytoplasmic Enzymes
Z. Fan, J.E. McBride, W.H. van Zyl, and L.R. Lynd
Published online 31 August 2005

45 Emulsion Strategies in the Microencapsulation of Cells: Pathways to Thin Coherent Membranes
A. Leung, Y. Ramaswamy, P. Munro, G. Lawrie, L. Nielsen, and M. Trau
Published online 28 June 2005

54 Mutual Relationships Between Soils and Biological Carrier Systems
C. Zohar-Perez, I. Chet, and A. Nussinovitch
Published online 16 June 2005

61 Quasi-Continuous Combined Scattered Light and Fluorescence Measurements: A Novel Measurement Technique for Shaken Microtiter Plates
M. Samorski, G. Müller-Newen, and J. Büchs
Published online 29 June 2005

69 Flow-Cytometric Detection of Changes in the Physiological State of *E. coli* Expressing a Heterologous Membrane Protein During Carbon-Limited Fedbatch Cultivation
V. Looser, F. Hammes, M. Keller, M. Berney, K. Kovar, and T. Egli
Published online 2 September 2005

79 Platelet Cryopreservation Using a Trehalose and Phosphate Formulation
Y. Nie, J.J. de Pablo, and S.P. Palecek
Published online 3 June 2005

91 Metabolic Pathways Reconstruction by Frequency and Amplitude Response to Forced Glycolytic Oscillations in Yeast
W.B. Zimmerman
Published online 7 July 2005

117 Evaluation of the Tetracycline Promoter System for Regulated Gene Expression in *Kluyveromyces marxianus*
D.C. Pecota and N.A. Da Silva
Published online 16 June 2005

COMMUNICATION TO THE EDITOR

124 Laccase-Catalysed Iodide Oxidation in Presence of Methyl Syringate
J. Kulys, I. Bratkovskaja, and R. Vidziunaite
Published online 3 August 2005

October 20, 2005

ARTICLES

129 Laser-Guided Direct Writing for Three-Dimensional Tissue Engineering
Y. Nahmias, R.E. Schwartz, C.M. Verfaillie, and D.J. Odde
Published online 15 July 2005

137 Biotransformation of *R*-2-Hydroxy-4-Phenylbutyric Acid by D-Lactate Dehydrogenase and *Candida boidinii* Cells Containing Formate Dehydrogenase Coimmobilized in a Fibrous Bed Bioreactor
Y. Bai and S.-T. Yang
Published online 21 July 2005

147 Effect of ArcA and FNR on the Expression of Genes Related to the Oxygen Regulation and the Glycolysis Pathway in *Escherichia coli* Under Microaerobic Growth Conditions
S. Shalel-Levanon, K.-Y. San, and G.N. Bennett
Published online 29 June 2005

160 Micropatterning Proteins on Polyhydroxyalkanoate Substrates by Using the Substrate Binding Domain as a Fusion Partner
J.P. Park, K.-B. Lee, S.J. Lee, T.J. Park, M.G. Kim, B.H. Chung, Z.-W. Lee, I.S. Choi, and S.Y. Lee
Published online 18 July 2005

166 Baculoviral Polyhedrin–*Bacillus thuringiensis* Toxin Fusion Protein: A Protein-Based Bio-Insecticide Expressed in *Escherichia coli*
J.H. Seo, J.S. Yeo, and H.J. Cha
Published online 24 June 2005

173 Effect of pH Change on the Performance and Microbial Community of Enhanced Biological Phosphate Removal Process
T. Zhang, Y. Liu, and H.H.P. Fang
Published online 16 June 2005

183 pH Shift Enhancement of *Candida utilis* Pyruvate Decarboxylase Production
A.K.-L. Chen, M. Breuer, B. Hauer, P.L. Rogers, and B. Rosche
Published online 23 June 2005

189 A Simple Non Invasive Computerized Method for the Assessment of Bone Repair within Osteoconductive Porous Bioceramic Grafts
F. Beltrame, R. Cancedda, B. Canesi, A. Crovace, M. Mastrogiacomo, R. Quarto, S. Scaglione, C. Valastro, and F. Viti
Published online 8 July 2005

199 Tangential Flow Microfiltration and Ultrafiltration for Human Influenza A Virus Concentration and Purification
S.R. Wickramasinghe, B. Kalbfuß, A. Zimmermann, V. Thom, and U. Reichl
Published online 22 July 2005

209 Mathematical Modelling of a Mixed Culture Cultivation Process for the Production of Polyhydroxybutyrate
J.M.L. Dias, L.S. Serafim, P.C. Lemos, M.A.M. Reis, and R. Oliveira
Published online 30 June 2005

223 How Reliable are Thermodynamic Feasibility Statements of Biochemical Pathways?
T. Maskow and U. von Stockar
Published online 16 June 2005

231 Use of Water to Evaluate Hydrophobicity of Organically-Modified Xerogel Enzyme Supports
J.S. Clifford and R.L. Legge
Published online 29 June 2005

238 An Analysis of Variability in the Manufacturing of Dexosomes: Implications for Development of an Autologous Therapy
S. Patel, A. Mehta-Damani, H. Shu, and J.-B. Le Pecq
Published online 21 July 2005

COMMUNICATION TO THE EDITOR

250 The Influence of N-Glycosylation and C-Terminal Sequence on Secretion of HBV Large Surface Antigen From *S. cerevisiae*
J.-S. Park, H.-S. Seo, J.-S. Yum, H.M. Moon, and J. Lee
Published online 22 August 2005

November 5, 2005

ACCELERATED PUBLICATION

257 E-Cadherin Synergistically Induces Hepatospecific Phenotype and Maturation of Embryonic Stem Cells in Conjunction With Hepatotrophic Factors
A. Dasgupta, R. Hughey, P. Lancin, L. Larue, and P.V. Moghe
Published online 15 September 2005

ARTICLES

267 Transfection of *HeLa*-Cells With *pEGFP* Plasmid by Impedance Power-Assisted Electroporation
J. Glahder, B. Norrild, M.B. Persson, and B.R.R. Persson
Published online 13 September 2005

277 Global Expression Profiling of *Bacillus subtilis* Cells During Industrial-Close Fed-Batch Fermentations With Different Nitrogen Sources
B. Jürgen, S. Tobisch, M. Wümpelmann, D. Gördes, A. Koch, K. Thurow, D. Albrecht, M. Hecker, and T. Schweder
Published online 21 September 2005

299 Application of an Electric DNA-Chip for the Expression Analysis of Bioprocess-Relevant Marker Genes of *Bacillus subtilis*
B. Jürgen, K.B. Barken, S. Tobisch, D. Pioch, M. Wümpelmann, M. Hecker, and T. Schweder
Published online 22 September 2005

308 Robust Scale-Up of Dead End Filtration: Impact of Filter Fouling Mechanisms and Flow Distribution
M.E. Laska, R.P. Brooks, M. Gayton, and N.S. Pujar
Published online 15 September 2005

321 Novel Quantitative Tools for Engineering Analysis of Hepatocyte Cultures in Bioartificial Liver Systems
N.S. Sharma, M.G. Ierapetritou, and M.L. Yarmush
Published online 22 September 2005

336 Neurogenesis and Neuronal Communication on Micropatterned Neurochips
M. Bani-Yaghoub, R. Tremblay, R. Voicu, G. Mealing, R. Monette, C. Py, K. Faid, and M. Sikorska
Published online 10 August 2005

346 Mathematical Model of Real-Time PCR Kinetics
J.L. Gevertz, S.M. Dunn, and C.M. Roth
Published online 16 September 2005

356 Application of a Direct Fluorescence-Based Live/Dead Staining Combined with Fluorescence in situ Hybridization for Assessment of Survival Rate of *Bacteroides* Spp. in Drinking Water
O. Savichtcheva, N. Okayama, T. Ito, and S. Okabe
Published online 18 July 2005

364 Continuous Operation of Foamed Emulsion Bioreactors Treating Toluene Vapors
E. Kan and M.A. Deshusses
Published online 22 July 2005

372 Transport Phenomena During Freezing of Adipose Tissue Derived Adult Stem Cells
S. Thirumala, J.M. Gimble, and R.V. Devireddy
Published online 9 September 2005

COMMUNICATION TO THE EDITOR

384 Proteome Analysis to Assess Physiological Changes in *Escherichia coli* Grown Under Glucose-Limited Fed-Batch Conditions
B. Raman, M.P. Nandakumar, V. Muthuvijayan, and M.R. Marten
Published online 22 September 2005

November 20, 2005

ACCELERATED PUBLICATION

393 Oxytetracycline Inactivation by Putative Reactive Oxygen Species Released to Nutrient Medium of *Helianthus annuus* Hairy Root Cultures
N.P. Gujarathi and J.C. Linden
Published online 16 September 2005

ARTICLES

403 Responses of *Saccharomyces cerevisiae* to Thermal Stress
S. Guyot, E. Ferret, and P. Gervais
Published online 18 July 2005

410 Rapid and Highly Sensitive Detection of Cadmium Chloride Induced Cytotoxicity Using the HSP70B′ Promoter in Live Cells
K.-I. Wada, A. Taniguchi, L. Xu, and T. Okano
Published online 9 September 2005

416 Saturation Mutagenesis of 2,4-DNT Dioxygenase of *Burkholderia* sp. Strain DNT for Enhanced Dinitrotoluene Degradation
T. Leungsakul, B.G. Keenan, H. Yin, B.F. Smets, and T.K. Wood
Published online 18 July 2005

427 Detachment of Multi Species Biofilm in Circulating Fluidized Bed Bioreactor
A. Patel, G. Nakhla, and J. Zhu
Published online 18 July 2005

438 Mono- and Disaccharides Enhance the Activity and Enantioselectivity of *Burkholderia cepacia* Lipase in Organic Solvent but Do Not Significantly Affect its Conformation
F. Secundo and G. Carrea
Published online 18 July 2005

447 Determination of Extracellular and Intracellular pH of *Bacillus subtilis* Suspension Under CO_2 Treatment
S. Spilimbergo, A. Bertucco, G. Basso, and G. Bertoloni
Published online 15 July 2005

452 Production and *N*-Glycan Analysis of Secreted Human Erythropoietin Glycoprotein in Stably Transfected *Drosophila* S2 Cells
Y.K. Kim, H.S. Shin, N. Tomiya, Y.C. Lee, M.J. Betenbaugh, and H.J. Cha
Published online 15 July 2005

462 Effects of pH, CO_2, and Flow Pattern on the Autotrophic Degradation of Hydrogen Sulfide in a Biotrickling Filter
Y. Jin, M.C. Veiga, and C. Kennes
Published online 15 July 2005

472 Accelerating Perfusion Process Optimization by Scanning Non-Steady-State Responses
S. Angepat, V.M. Gorenflo, and J.M. Piret
Published online 26 July 2005

479 Compared Tolerance to Osmotic Stress in Various Microorganisms: Towards a Survival Prediction Test
Y. Mille, L. Beney, and P. Gervais
Published online 22 August 2005

485 Yeast Surface Display of a Noncovalent MHC Class II Heterodimer Complexed With Antigenic Peptide
E.T. Boder, J.R. Bill, A.W. Nields, P.C. Marrack, and J.W. Kappler
Published online 22 September 2005

492 Encapsulation of Adult Human Mesenchymal Stem Cells Within Collagen-Agarose Microenvironments
A. Batorsky, J. Liao, A.W. Lund, G.E. Plopper, and J.P. Stegemann
Published online 9 September 2005

501 Removal of Poly-Histidine Fusion Tags From Recombinant Proteins Purified by Expanded Bed Adsorption
N. Abdullah and H.A. Chase
Published online 3 August 2005

COMMUNICATION TO THE EDITOR

514 Optical Analysis of Perfusion Bioreactor Cell Concentration in an Acoustic Separator
V.M. Gorenflo, V.S. Chow, C. Chou, and J.M. Piret
Published online 9 September 2005

December 5, 2005

ACCELERATED PUBLICATION

519 Parallel Analysis of Mutant Human Glucose 6-Phosphate Dehydrogenase in Yeast Using PCR Colonies
J. Merritt, J.A. Butz, B.A. Ogunnaike, and J.S. Edwards
Published online 28 September 2005

ARTICLES

532 Separation of Polyunsaturated Fatty Acids by Selective Inclusion in Guanidinium-1,5-Naphthalenedisulfonate·2-Methoxyethanol Host Networks
J.N. Voogt and H.W. Blanch
Published online 10 August 2005

541 Shikimic Acid Production by a Modified Strain of *E. coli* (W3110.shik1) Under Phosphate-Limited and Carbon-Limited Conditions
L. Johansson, A. Lindskog, G. Silfversparre, C. Cimander, K.F. Nielsen, and G. Lidén
Published online 20 October 2005

553 Optimization of DsRed Production in *Escherichia coli*: Effect of Ribosome Binding Site Sequestration on Translation Efficiency
B.F. Pfleger, N.J. Fawzi, and J.D. Keasling
Published online 24 October 2005

559 Bioleaching of Sulfidic Tailing Samples with a Novel, Vacuum-Positive Pressure Driven Bioreactor
O.I. Rzhepishevska, E. Börje Lindström, O.H. Tuovinen, and M. Dopson
Published online 21 October 2005

568 The Use of Multi-Parameter Flow Cytometry to Study the Impact of Limiting Substrate, Agitation Intensity, and Dilution Rate on Cell Aggregation During *Bacillus licheniformis* CCMI 1034 Aerobic Continuous Culture Fermentations
T.L. da Silva, A. Reis, C.A. Kent, J.C. Roseiro, and C.J. Hewitt
Published online 30 September 2005

579 Oriented Schwann Cell Growth on Microgrooved Surfaces
S.-h. Hsu, C.-Y. Chen, P.S. Lu, C.-S. Lai, and C.-J. Chen
Published online 31 October 2005

589 Enhanced Growth in NS0 Cells Expressing Aminoglycoside Phosphotransferase is Associated with Changes in Metabolism, Productivity, and Apoptosis
F.S. Veraitch and M. Al-Rubeai
Published online 2 November 2005

600 A New Approach for Modelling Simultaneous Storage and Growth Processes for Activated Sludge Systems Under Aerobic Conditions
G. Sin, A. Guisasola, D.J.W. De Pauw, J.A. Baeza, J. Carrera, and P.A. Vanrolleghem
Published online 20 October 2005

614 Oxygen Profiles and Biomass Distribution in Biopellets of *Aspergillus niger*
A. Hille, T.R. Neu, D.C. Hempel, and H. Horn
Published online 31 August 2005

624 Production of 2-Phenylethanol and 2-Phenylethylacetate from L-Phenylalanine by Coupling Whole-Cell Biocatalysis with Organophilic Pervaporation
M.M.W. Etschmann, D. Sell, and J. Schrader
Published online 21 September 2005

635 Cell Cycle Synchronization of *Cupriavidus necator* by Continuous Phasing Measured via Flow Cytometry
M. Fritsch, J. Starruß, A. Loesche, S. Mueller, and Th. Bley
Published online 22 September 2005

643 A Novel Superporous Agarose Medium for High-Speed Protein Chromatography
Q.-H. Shi, X. Zhou, and Y. Sun
Published online 31 October 2005

652 Alanine 101 and Alanine 110 of the Alpha Subunit of *Pseudomonas stutzeri* OX1 Toluene-*o*-Xylene Monooxygenase Influence the Regiospecific Oxidation of Aromatics
G. Vardar, Y. Tao, J. Lee, and T. K. Wood
Published online 22 August 2005

COMMUNICATION TO THE EDITOR

659 Determining Particle Density Distribution of Expanded Bed Adsorbents
S. Hassan, N. Titchener-Hooker, and N. Willoughby
Published online 24 October 2005

December 20, 2005

ACCELERATED PUBLICATION

665 Antibody Variable Region Interactions with Protein A: Implications for the Development of Generic Purification Processes
S. Ghose, M. Allen, B. Hubbard, C. Brooks, and S.M. Cramer
Published online 4 October 2005

ARTICLES

674 Fermentation, Purification, Formulation, and Pharmacological Evaluation of a Prolyl Endopeptidase From *Myxococcus xanthus*: Implications for Celiac Sprue Therapy
J. Gass, J. Ehren, G. Strohmeier, I. Isaacs, and C. Khosla
Published online 31 August 2005

685 Conductivity and pH Dual Detection of Growth Profile of Healthy and Stressed *Listeria monocytogenes*
L. Yang, P.P. Banada, Y.-S. Liu, A.K. Bhunia, and R. Bashir
Published online 15 September 2005

695 Production of Phytoene by Herbicide-Treated Microalgae *Dunaliella bardawil* in Two-Phase Systems
R. León, M. Vila, D. Hernánz, and C. Vílchez
Published online 3 August 2005

702 Microbial Transformations 59: First Kilogram Scale Asymmetric Microbial Baeyer-Villiger Oxidation with Optimized Productivity Using a Resin-Based in situ SFPR Strategy
I. Hilker, R. Wohlgemuth, V. Alphand, and R. Furstoss
Published online 27 September 2005

711 A Mathematical Model of N-Linked Glycosylation
F.J. Krambeck and M.J. Betenbaugh
Published online 24 October 2005

729 Substrate Uptake Tests and Quantitative FISH Show Differences in Kinetic Growth of Bulking and Non-Bulking Activated Sludge
I. Lou and F.L. de los Reyes III
Published online 9 September 2005

740 On-Line Monitoring of CO_2 Production in *Lactococcus lactis* During Physiological pH Decrease Using Membrane Inlet Mass Spectrometry With Dynamic pH Calibration
A.Z. Andersen, F.R. Lauritsen, and L.F. Olsen
Published online 13 October 2005

748 Quantitative Methods for Developing Fc Mutants With Extended Half-Lives
D.T. Kamei, B.J. Lao, M.S. Ricci, R. Deshpande, H. Xu, B. Tidor, and D.A. Lauffenburger
Published online 31 Augsut 2005

761 Prediction of Gas-Liquid Mass Transfer Coefficient in Sparged Stirred Tank Bioreactors
F. Garcia-Ochoa and E. Gomez
Published online 9 September 2005

773 Purification of Different Lipases from *Aspergillus niger* by Using a Highly Selective Adsorption on Hydrophobic Supports
G. Fernández-Lorente, C. Ortiz, R.L. Segura, R. Fernández-Lafuente, J.M. Guisán, and J.M. Palomo
Published online 9 September 2005

780 Targeted Ultrasound Contrast Agents: In Vitro Assessment of Endothelial Dysfunction and Multi-Targeting to ICAM-1 and Sialyl Lewis^x
G.E.R. Weller, F.S. Villanueva, E.M. Tom, and W.R. Wagner
Published online 24 August 2005

789 Process Modeling of In Situ-Adsorption of a Bacterial Lipase
M. Millitzer, E. Wenzig, and W. Peukert
Published online 2 November 2005

December 30, 2005
ARTICLES

803 Production of a Recombinant Cholera Toxin B subunit-Insulin B chain Peptide Hybrid Protein by *Brevibacillus choshinensis* Expression System as a Nasal Vaccine Against Autoimmune Diabetes
Y. Yuki, C. Hara-Yakoyama, A.A.E. Guadiz, S. Udaka, H. Kiyono, and S. Chatterjee
Published online 2 September 2005

810 Zero Valent Iron as an Electron-Donor for Methanogenesis and Sulfate Reduction in Anaerobic Sludge
S. Karri, R. Sierra-Alvarez, and J.A. Field
Published online 31 August 2005

820 Engineering an Affinity Tag for Genetically Encoded Cyclic Peptides
T.A. Naumann, S.N. Savinov, and S.J. Benkovic
Published online 9 September 2005

831 In Vitro Galactosylation of Human IgG at 1 kg Scale Using Recombinant Galactosyltransferase
D. Warnock, X. Bai, K. Autote, J. Gonzales, K. Kinealy, B. Yan, J. Qian, T. Stevenson, D. Zopf, and R.J. Bayer
Published online 26 September 2005

843 Strain Stability in Biological Systems Treating Recalcitrant Organic Compounds
E.A.C. Emanuelsson, I.I.R. Baptista, A. Mantalaris, and A.G. Livingston
Published online 22 September 2005

850 In Silico Genome-Scale Reconstruction and Validation of the *Staphylococcus aureus* Metabolic Network
M. Heinemann, A. Kümmel, R. Ruinatscha, and S. Panke
Published online 9 September 2005

865 An Epoch-Making Application of Discharge Plasma Phenomenon to Gene-Transfer
Y. Ogawa, N. Morikawa, A. Ohkubo-Suzuki, S. Miyoshi, H. Arakawa, Y. Kita, and S. Nishimura
Published online 16 September 2005

871 Structure of a Cellulose Degrading Bacterial Community During Anaerobic Digestion
C.A. O'Sullivan, P.C. Burrell, W.P. Clarke, and L.L. Blackall
Published online 2 September 2005

879 Influence of Mechanical Stress and Surface Interaction on the Aggregation of *Aspergillus niger* Conidia
L.H. Grimm, S. Kelly, I.I. Völkerding, R. Krull, and D.C. Hempel
Published online 27 October 2005

889 Reversible Permeabilization Using High-Intensity Femtosecond Laser Pulses: Applications to Biopreservation
V. Kohli, J.P. Acker, and A.Y. Elezzabi
Published online 27 September 2005

900 Kinetics of Hydrogen-Dependent Denitrification Under Varying pH and Temperature Conditions
B. Rezania, N. Cicek, and J.A. Oleszkiewicz
Published online 22 August 2005

907 Characterization of Mixing in a Novel Wavy-Walled Bioreactor for Tissue Engineering
B. Bilgen, I.M. Chang-Mateu, and G.A. Barabino
Published online 20 September 2005

920 Differentiation and Lineage Selection of Mouse Embryonic Stem Cells in a Stirred Bench Scale Bioreactor With Automated Process Control
M. Schroeder, S. Niebruegge, A. Werner, E. Willbold, M. Burg, M. Ruediger, L.J. Field, J. Lehmann, and R. Zweigerdt
Published online 27 September 2005

934 Immobilization and Hybridization of DNA in a Sugar Polyacrylate Hydrogel
C.M. Soto, C.H. Patterson, P.T. Charles, B.D. Martin, and M.S. Spector
Published online 9 September 2005

943 Indexes to Volume 92